Design, Manufacture
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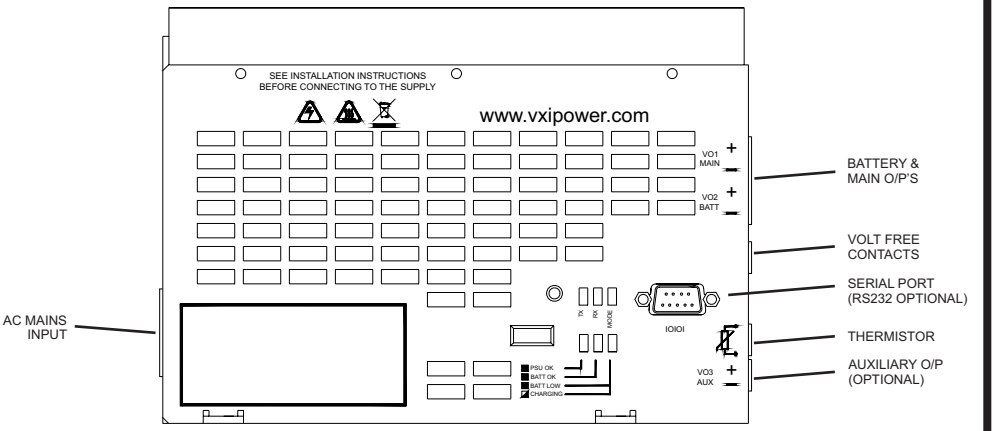
Power Related Products

PSU's, Chargers, AC-DC Converters,
Turnkey Enclosures & Batteries,
Custom Design Solutions

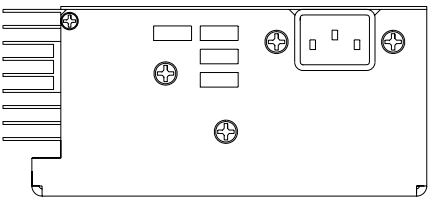
INSTALLATION MANUAL
ORACLE III 200-E BATTERY BACKED PSU/CHARGER
'14921-V113' & '14921-V115'

Introduction
This application note is intended for use by installers, or by new customers evaluating sample units. It is a guide to the main functionality of the Oracle 200-E unit, and demonstrates the main features.
Models 14921-V113 and 14921-V115 are configured to have compatible signals and operation to the Ulysees IPS-C6 PSU.
The 14921-V113 model has a maximum output of 28VDC, the 14921-V115 model has a maximum output of 26VDC.

Connection sequence
When connecting unit ensure all other connections are made before connecting the battery. Only then should AC be applied to the unit.

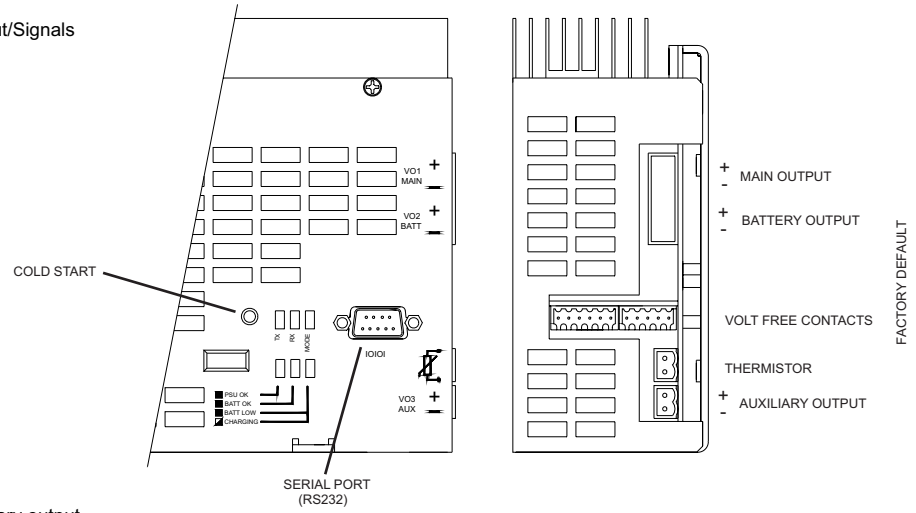


AC Mains Input
Mains input is via a IEC connector.
The unit is auto-ranging over the input range 85-264V AC RMS, 50/60Hz.



Where installed in a system cabinet, the psu earth conductor should not be used as the overall system earth. Cabinets should have supplementary earth bonding in accordance with the installed equipment.

Output/Signals



Auxiliary output
An auxiliary output is provided for customer equipment. This is common 0V with the main and battery outputs.

Thermistor / Temperature compensation
A thermistor lead is supplied which must be used for remote sensing applications to ensure correct operation of the battery charger.
The unit provides temperature compensated charging.
The thermistor should be sited close to the batteries being charged.
A fault condition will occur if the thermistor is short or open circuit. (See troubleshooting).

Battery Output
All Oracle units are battery backed, having a separate output to charge the batteries. In the event of a mains failure an internal diode back feeds the battery current to the main output. The battery output has a preset current limit.

Main output
Main output is derived from the power supply during normal operation, from the batteries during mains out.
The main output has a preset current limit.

Start-up conditions
The unit runs a self-diagnostic after application of power, in which the input/output conditions are examined in order to give rise to relevant alarm indications. Allow circa 30 seconds for stabilisation after all connections are made and power applied.

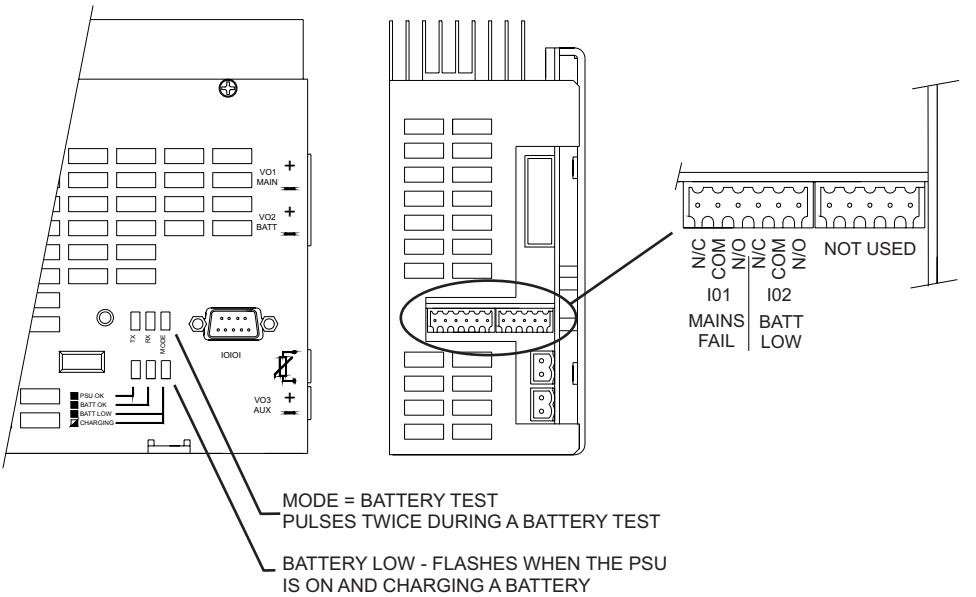
Cold Start
The unit can start directly from batteries by pressing the ‘cold start’ button.
Note: The batteries need to be >75% charged to use this function.

Batteries
The charger is designed for VRLA batteries; please consult the factory for suitability of other types. Please ensure the battery/batteries installed are of the correct type. Use of non-specified batteries may result in false battery low alarms (in units with battery test).
External fusing for the batteries must be provided. There is no battery fuse internal to the unit.
Safety note: Please consult manufacturers data before using batteries. Avoid short circuit. Observe polarity.

Battery test
Initiation of battery test is implemented through software. The battery test will only initiate when the battery is in a sufficient state of charge to give a relevant result.
See also “LED functions”

Under Voltage Lockout (UVLO)
Under Voltage Lock Out is a battery protection feature.
The unit constantly monitors battery voltage, and disconnects the battery at a predetermined (in software) voltage.
This prevents deep discharge when running from batteries.

LED / Volt free relay functions (factory defaults)
Two sets of volt free contacts are provided which indicate fault conditions.
I01 is factory set to Mains Fail.
I02 is factory set to Battery Low.



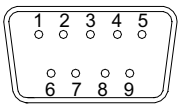
VOLT FREE RELAY ACTIVE CONDITION	LED INDICATOR 'ON' CONDITION	MAINS OK	NO CHARGE AVAILABLE	CHARGER OVERTEMP	BATTERY THERM S/C	BATTERY THERM O/C	V01 OVP	V02 OVP	BATTERY CONNECTED	BATTERY LOW
	PSU OK	Y	N	N	N	N	N	N		
	BATTERY OK								Y	N
	BATTERY LOW									Y
BATTERY LOW									N	Y
MAINS FAIL		N								

VOLT FREE ACTIVE STATES:
PSU OK, ACTIVE = CLOSED
BATTERY FAULT, ACTIVE = OPEN

EITHER CONDITION CAUSES BATTERY FAULT

Note: all other combinations of the PSU present conditions above will produce a fault.

Serial Communications
The unit is fitted with a serial port compatible with a Ulysses RTU.



2 - Rx
3 - Tx
5 - 0V

Connector Pinouts

Troubleshooting
Q PSU OK LED not lit.
A Check mains supply ok.
A Check thermistor ok.

Q Battery OK LED not lit.
A Check battery wiring/fuses

Q Battery low LED lit.
A Battery is low, disconnected, or has failed battery test.

Q Battery Low LED flashing
A Battery is charging normal operation.

Q Battery Low LED is out
A Battery is charged

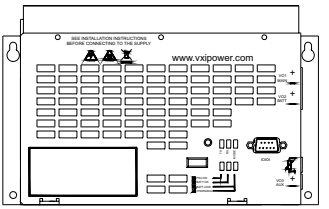
Q Battery test button has been pressed no battery test has occurred
A Is battery low flashing (unit only test batteries when charged)

Safety instructions
The PSU must be reliably connected to earth.
A label showing the protective earth symbol (IEC415 No.5017) should be affixed adjacent to the system earth terminal.
A suitable primary disconnect device shall be provided by the end use application.
The secondary outputs are considered for connection to SELV circuits only.
The maximum leakage current of the final equipment should not exceed 3.5mA under normal operating conditions.

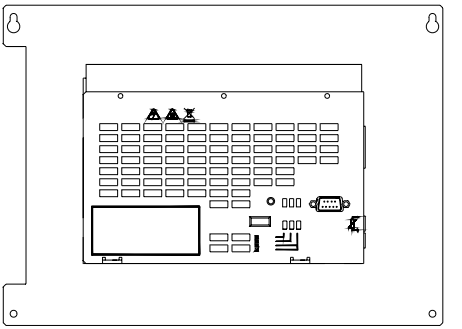
Installation
The unit should be installed to allow adequate airflow through the unit.
Do not cover the ventilation slots in the unit cover.

Part Numbers & Mounting Options
The PSU is available in 2 output options and mounting panel configurations.

Part Numbers
14921-V113 28V Output PSU
14921-V115 26V Clipped Output PSU
14921-171A Standard Mounting Panel Kit (Inc. Connectors and Thermistor Lead)
14921-172A IPS-C6 'Retro-Fit' Mounting Panel Kit (Inc .Connectors where applicable)



Standard Mounting Panel



IPS-C6 'Retro-Fit' Mounting Panel

VxI Power Limited
Station Road, North Hykeham, Lincoln, LN6-3QY, UK
Tel: +44 (0)1522 500511 Fax: +44 (0)1522 500515 Mail: mail@vxipower.com
www.vxipower.com